Differing Views on Spinal Cord Repair
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In his Viewpoint "Repairing the injured spinal cord" (Bodybuilding: The Bionic Human, 8 February, p. 1029), Martin E. Schwab summarizes four different repair strategies, namely, neutralizing growth inhibitors, grafting of peripheral bridges (both strategies for inducing regeneration), restoring the activity of remaining fibers, and increasing neuronal plasticity. His lack of emphasis on neuroprotection (rescue of spared axons from delayed posttraumatic degeneration) is puzzling because he points out that in patients with spinal injury, complete anatomical separation of the spinal cord is very rare. This would suggest that spared neurons should receive attention to ensure their continued viability and function. Such neuroprotection is a prerequisite for the therapeutic strategies he mentions.

Schwab's sole reference to neuroprotection concerns treatment with methylprednisolone, currently the only drug approved for use in patients with spinal cord injuries. He comments that whether inflammatory reaction causes further damage to the spared neurons is a matter of debate. We suggest that this statement is an oversimplification. Inflammation is not a single phenomenon of uniform manifestation, but rather a variety of processes that vary in nature, complexity, and outcome. Accordingly, and in light of recent findings in this connection, it would seem that the time has come to stop considering inflammation as "good" or "bad" for recovery, and instead to recognize that inflammation is the way through which the body heals itself and hence that therapeutic intervention should be aimed at controlling and boosting rather than suppressing it.

It is widely acknowledged that the immune system protects us from damage inflicted by external pathogens. A considerable body of evidence indicates that when the damage is caused by an insult that is the result not of foreign pathogens but of destructive self-compounds, protection can be achieved physiologically through an immune response directed against self-compounds. This autoimmune mechanism of spinal cord repair can be boosted by a variety of manipulations, such as transplantation of activated macrophages, passive immunization with autoimmune T cells, or active posttraumatic T cell-based vaccination with myelin peptides (1-6). These treatments do not merely "enhance myelin clearance." They serve the strategic purpose of boosting a well-controlled inflammation as a tool, directing immune cells to the lesion site (by vaccination with myelin antigens)and helping the body to apply its own repair mechanism for protection and regeneration.

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